



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,675	03/17/2004	Osamu Shinkawa	9319A-000735	2688

27572 7590 08/14/2006

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

UHLENHAKE, JASON S

ART UNIT	PAPER NUMBER
----------	--------------

2853

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,675

Applicant(s)

SHINKAWA, OSAMU

Examiner

Jason Uhlenhake

Art Unit

2853

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 6-8, 15-21, 23-24, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) in view of Watanabe (U.S. Pat. 4,484,199).

Fukano discloses:

- ***regarding claim 1, 20***, an apparatus and a method including: a droplet ejection head (Figure 3) including a diaphragm (26); an actuator (9) which displaces the diaphragm; a cavity (23) filled with a liquid, an internal pressure of the cavity being increased and decreased in response to displacement of the diaphragm
 - a nozzle (24) communicated with the cavity through which the liquid is ejected in the form of droplets in response to the increase and decrease of the internal pressure of the cavity
 - a driving circuit (Figure 1) that drives the actuator of each droplet
 - oscillation means which generates a signal on the basis of a residual vibration (Figures 4d, 5d) of the diaphragm (26) displaced by the actuator (9) after driving the actuator by the driving circuit (Page 7, Line 13 – Page 8, Line 6)
 - judging means for judging whether or not an ejection failure is occurring in the droplet ejection heads (Abstract; Page 3, Lines 15-19)

- **regarding claim 2, 21**, judging means judges a cause of the ejection failure when it is judged that the ejection failure is occurring (Page 6, Lines 17 – Page 7, Line 2)
- **regarding claim 6, 23**, a storage means for storing the cause of the ejection failure judged by the judging means (Page 8, Lines 20-25)
- **regarding claim 7, 24**, switching means (transistors 7 or 8) for switching a connection of the actuator from the driving circuit to the oscillation means after carrying out a droplet ejection operation by driving the actuator (immediately after ejection, transistors 7 and 8 receive a signal and are switched on thereby connecting the actuator to the detection means)
- **regarding claim 8**, the oscillation means includes a resistance component connected to the actuator, and forms a CR oscillation circuit based on the electric capacitance component of the actuator and a resistance component of the resistor element (Page 4, Lines 22-25)
- **regarding claim 17**, wherein the actuator includes an electrostatic actuator (piezoelectric actuators are electrostatic)
- **regarding claim 18**, the actuator includes a piezoelectric actuator having a piezoelectric element and using a piezoelectric effect of the piezoelectric element (Element 9)
- **regarding claim 19**, the droplet ejection apparatus includes an ink jet printer (Title)

Fukano does not disclose expressly the following:

- **regarding claim 1, 20**, subtracting means which subtracts the number of pulses, which are included in the signal generated by the oscillation means for a predetermined time period, from a predetermined reference value
- **regarding claim 16**, subtracting means which subtracts the number of pulses, which are included in the signal generated by the oscillation means for a predetermined time period, from a predetermined reference value
- **regarding claim 15**, the predetermined reference value is the number of pulses in the signal generated by the oscillation means for the predetermined time period when the droplet is normally ejected from the droplet ejection head value
- **regarding claim 26**, predetermined reference value is the number of pulses, which are included in the generated signal for the predetermined time period when the droplet is normally ejected from the droplet ejection head

Watanabe discloses:

- **regarding claim 1, 20**, subtracting means which subtracts the number of pulses, which are included in the signal generated by the oscillation means for a predetermined time period, from a predetermined reference value (Column 3, Line 65 – Column 4, Line 8), for the purpose of detecting whether or not ink droplets are being properly jetted from the nozzles of a printing head
- **regarding claim 16**, subtracting means which subtracts the number of pulses, which are included in the signal generated by the oscillation means for a predetermined time period, from a predetermined reference value (Column 3, Lines 65 – 67; Column 4, Lines 1 – 8), for the purpose of detecting ejection failure.

Art Unit: 2853

- **regarding claim 15**, the predetermined reference value is the number of pulses in the signal generated by the oscillation means for the predetermined time period when the droplet is normally ejected from the droplet ejection head value (Column 3, Lines 65 – 67; Column 4, Lines 1 – 8), for the purpose of detecting ejection failure

- **regarding claim 26**, predetermined reference value is the number of pulses, which are included in the generated signal for the predetermined time period when the droplet is normally ejected from the droplet ejection head (Column 3, Lines 65 – 67; Column 4, Lines 1 – 8), for the purpose of detecting ejection failure.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of subtracting means which subtracts the number of pulses, which are included in the signal generated by the oscillation means for a predetermined time period, from a predetermined reference value; subtracting means which subtracts the number of pulses, which are included in the signal generated by the oscillation means for a predetermined time period, from a predetermined reference value; the predetermined reference value is the number of pulses in the signal generated by the oscillation means for the predetermined time period when the droplet is normally ejected from the droplet ejection head value; predetermined reference value is the number of pulses, which are included in the generated signal for the predetermined time period when the droplet is normally ejected from the droplet ejection head as taught by Watanabe into the device of Fukano, for the

purpose of detecting whether or not ink droplets are being properly jetted from the nozzles of a printing head.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199), as applied to claim 1 above, and further in view of Yamaguchi et al (U.S. Pat. 5,379,061)

Fukano as modified by Watanabe discloses all the claimed limitations except for the following:

- ***regarding claim 3***, the judging means judges that an air bubble has intruded into the cavity in the case where the subtraction result is smaller than a first threshold

Yamaguchi et al discloses:

- ***regarding claim 3***, the judging means judges that an air bubble has intruded into the cavity in the case where the subtraction result is smaller than a first threshold (Column 6, Lines 26-33), for the purpose of determining a cause of error to be corrected in order to create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of the judging means judges that an air bubble has intruded into the cavity in the case where the result is smaller than a first threshold as taught by Yamaguchi et al into the device of Fukano as modified by Watanabe, for the purpose of determining a cause of error to be corrected in order to

create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199), as applied to claim 1 above, and further in view of Noyes et al (U.S. Pat. 6,364,452)

Fukano as modified by Watanabe discloses all the claimed limitations above except for the following:

- ***regarding claim 4***, judging means judges the liquid in the vicinity of the nozzle has thickened due to drying in the case where the subtraction result is larger than a second threshold

Noyes et al discloses:

- ***regarding claim 4***, judging means judges the liquid in the vicinity of the nozzle has thickened due to drying in the case where the subtraction result is larger than a second threshold (Column 80, Lines 12 – 23), for the purpose of removing blockage to maintain a high print quality.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of judging means judges the liquid in the vicinity of the nozzle has thickened due to drying in the case where the subtraction result is larger than a second threshold as taught by Noyes et al into the device of Fukano as modified by Watanabe, for the purpose of removing any blockage to maintain a high print quality.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199) and Noyes et al (U.S. Pat. 6,364,452), as applied to claim 1 above, and further in view of Yamaguchi et al (U.S. Pat. 5,379,061)

Fukano as modified by Watanabe and Noyes discloses all the claimed limitations above except for the following:

- ***regarding claim 5***, judging means judges that paper dust is adhering in the vicinity of the outlet of the nozzle in the case where the subtraction result is smaller than the second threshold and larger than a third threshold

Yamaguchi et al discloses:

- ***regarding claim 5***, judging means judges that paper dust is adhering in the vicinity of the outlet of the nozzle in the case where the subtraction result is smaller than the second threshold and larger than a third threshold (Column 5, Lines 45-57), for the purpose of determining a cause of error to be corrected in order to create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of judging means judges that paper dust is adhering in the vicinity of the outlet of the nozzle in the case where the subtraction result is smaller than the second threshold and larger than a third threshold as taught by Yamaguchi et al into the device of Fukano as modified by Watanabe and

Noyes, for the purpose of determining a cause of error to be corrected in order to create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199), as applied to claim 1 above, and further in view of Fujii et al (U.S. Pub. 2001/0007460)

Fukano as modified by Watanabe discloses all the claimed limitations except for the following:

- ***regarding claim 9***, predetermined time period includes one or more time period in the residual vibration of the diaphragm when the droplet is normally ejected from the droplet ejection head
- ***regarding claim 10***, predetermined time period is a time period until the residual vibration is generated after the droplet has been normally ejected from the droplet ejection head

Fujii et al discloses:

- ***regarding claim 9***, predetermined time period includes one or more time period in the residual vibration of the diaphragm when the droplet is normally ejected from the droplet ejection head (Figure 8; Paragraph 01017), for the purpose of reducing printing trouble caused by a failure of abnormality in ink ejections.
- ***regarding claim 10***, predetermined time period is a time period until the residual vibration is generated after the droplet has been normally ejected from the

Art Unit: 2853

droplet ejection head (Figure 8; Paragraph 0107), for the purpose of reducing printing trouble caused by a failure of abnormality in ink ejections.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of predetermined time period includes one or more time period in the residual vibration of the diaphragm when the droplet is normally ejected from the droplet ejection head; predetermined time period is a time period until the residual vibration is generated after the droplet has been normally ejected from the droplet ejection head as taught by Fujii et al into the device of Fukano as modified by Watanabe, for the purpose of reducing the print trouble caused by a failure of abnormality in ink ejections.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199) and Fujii et al (U.S. Pub. 2001/0007460), as applied to claim 1 above, and further in view of Shingyohuchi (U.S. Pat. 6,811,238)

Fukano as modified by Watanabe and Fujii et al discloses all the claimed limitations except for the following:

- ***regarding claim 11***, predetermined time period is a time period until a half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head

- **regarding claim 12**, predetermined time period includes time periods every half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head

Shingyohuchi discloses:

- **regarding claim 11**, predetermined time period is a time period until a half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Claim 43), for the purpose of enabling fine droplets to be ejected.

- **regarding claim 12**, predetermined time period includes time periods every half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Claim 43), for the purpose of enabling fine droplets to be ejected.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of predetermined time period is a time period until a half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period includes time periods every half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head as taught by Shingyohuchi into the device of Fukano as modified by Watanabe and Fujii et al, for the purpose of enabling fine droplets to be ejected.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199) and Fujii et al (U.S. Pub. 2001/0007460), as applied to claim 1 above, and further in view of Shingyohuchi (U.S. Pub. 2002/0036667)

Fukano as modified by Watanabe and Fujii et al discloses all the claimed limitations except for the following:

- ***regarding claim 13***, predetermined time period is a time period until a quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head
- ***regarding claim 14***, predetermined time period includes time periods of every quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head

Shingyohuchi discloses:

- ***regarding claim 13***, predetermined time period is a time period until a quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Paragraph 0175), for the purpose of providing an ink jet head that enable fine droplets to be ejected.
- ***regarding claim 14***, predetermined time period includes time periods of every quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Paragraph 0175), for the purpose of providing an ink jet head that enable fine droplets to be ejected.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of predetermined time period is a time period until a quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period includes time periods of every quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head as taught by Shingyohuchi into the device of Fukano as modified by Watanabe and Fujii et al, for the purpose of providing an ink jet head that enables fine droplets to be ejected.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199), as applied to claim 1 above, and further in view of Yamaguchi et al (U.S. Pat. 5,379,061) and Noyes (U.S. Pat. 6,364,452)

Fukano as modified by Watanabe discloses all the claimed limitations except for the following:

- ***regarding claim 22***, the judging means judges that an air bubble has intruded into the cavity in the case where the subtraction result is smaller than a first threshold
- judging means judges the liquid in the vicinity of the nozzle has thickened due to drying in the case where the subtraction result is larger than a second threshold

- judging means judges that paper dust is adhering in the vicinity of the outlet of the nozzle in the case where the subtraction result is smaller than the second threshold and larger than a third threshold

Noyes et al discloses:

- ***regarding claim 22***, judging means judges the liquid in the vicinity of the nozzle has thickened due to drying in the case where the subtraction result is larger than a second threshold (Column 80, Lines 12 – 23), for the purpose of removing blockage to maintain a high print quality.

Yamaguchi et al discloses:

- ***regarding claim 22***, the judging means judges that an air bubble has intruded into the cavity in the case where the subtraction result is smaller than a first threshold (Column 6, Lines 26-33), for the purpose of determining a cause of error to be corrected in order to create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

- judging means judges that paper dust is adhering in the vicinity of the outlet of the nozzle in the case where the subtraction result is smaller than the second threshold and larger than a third threshold (Column 5, Lines 45-57), for the purpose of determining a cause of error to be corrected in order to create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of the judging means judges that an air bubble has intruded into the cavity in the case where the subtraction result is smaller

Art Unit: 2853

than a first threshold; judging means judges the liquid in the vicinity of the nozzle has thickened due to drying in the case where the subtraction result is larger than a second threshold; judging means judges that paper dust is adhering in the vicinity of the outlet of the nozzle in the case where the subtraction result is smaller than the second threshold and larger than a third threshold as taught by Yamaguchi et al and Noyes into the device of Fukano as modified by Watanabe, for the purpose of removing blockage to maintain a high print quality and determining a cause of error to be corrected in order to create a more robust and higher quality error detection system that not only detects, but also identifies an error cause

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukano (JP 63141750) as modified by Watanabe (U.S. Pat. 4,484,199), as applied to claim 1 above, and further in view of Fujii et al (U.S. Pub. 2001/0007460), Shingyohuchi (U.S. Pat. 6,811,238), and Shingyohuchi (U.S. Pub. 2002/0036667)

Fukano as modified by Watanabe discloses all the claimed limitations except for the following:

- ***regarding claim 25***, predetermined time period includes one or more time period in the residual vibration of the diaphragm when the droplet is normally ejected from the droplet ejection head; predetermined time period is a time period until the residual vibration is generated after the droplet has been normally ejected from the droplet ejection head; predetermined time period is a time period until a half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the

Art Unit: 2853

droplet ejection head; predetermined time period includes time periods every half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period is a time period until a quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period includes time periods of every quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head

Fujii et al discloses:

- ***regarding claim 25***, predetermined time period includes one or more time period in the residual vibration of the diaphragm when the droplet is normally ejected from the droplet ejection head (Figure 8; Paragraph 01017); predetermined time period is a time period until the residual vibration is generated after the droplet has been normally ejected from the droplet ejection head (Figure 8; Paragraph 0107), for the purpose of reducing printing trouble caused by a failure of abnormality in ink ejections.

Shingyohuchi ('238) discloses:

- ***regarding claim 25***, predetermined time period is a time period until a half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Claim 43); predetermined time period includes time periods every half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Claim 43), for the purpose of enabling fine droplets to be ejected.

Shingyohuchi ('667) discloses:

Art Unit: 2853

- **regarding claim 25**, predetermined time period is a time period until a quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Paragraph 0175); predetermined time period includes time periods of every quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head (Paragraph 0175), for the purpose of providing an ink jet head that enable fine droplets to be ejected.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of predetermined time period includes one or more time period in the residual vibration of the diaphragm when the droplet is normally ejected from the droplet ejection head; predetermined time period is a time period until the residual vibration is generated after the droplet has been normally ejected from the droplet ejection head; predetermined time period is a time period until a half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period includes time periods every half cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period is a time period until a quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head; predetermined time period includes time periods of every quarter cycle of the residual vibration of the diaphragm after the droplet has been normally ejected from the droplet ejection head as taught by Fujii et al, Shingyohuchi (238), and Shingyohuchi (667) into the device of Fukano as

Art Unit: 2853

modified by Watanabe, for the purpose of reducing printing trouble caused by a failure of abnormality in ink ejections, and enabling fine droplets to be ejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSU
July 28, 2006




K. FIGGINS
PRIMARY EXAMINER